

IV. AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A metal melting furnace comprising a preheating flue which is provided on its upper portion with a meltable material inlet opening and on its lower portion with an inclined hearth and a material melting burner which is oriented toward the lower portion of the preheating flue, a molten metal reservoir, and a temperature maintaining burner which provided in the molten metal reservoir, so that a meltable material which is introduced in the preheating flue is heated and melted by the material melting burner and is moved along and on the inclined hearth into the molten metal reservoir in which the temperature of the molten metal is maintained by the temperature maintaining burner, wherein a separation wall is provided between the inclined hearth and the molten metal reservoir to define a molten metal processing portion in a form of a chamber disposed between the separation wall and the inclined hearth, said separation wall being provided with a connecting passage for the molten metal, between the molten metal reservoir and the molten metal processing portion, at a height level higher than a bottom surface of the molten metal processing portion, said separation wall being provided on its upper portion with an exhaust gas passage which permits exhaust gas discharged from the molten metal reservoir to pass therethrough, and wherein an inspection opening with a door is provided in a furnace wall surface to open into the molten metal processing portion.

2. (Original) A metal melting furnace according to claim 1, wherein a bottom surface of the molten metal reservoir is substantially flush with the lower side of the connecting passage for the molten metal.

3. (Original) A metal melting furnace according to claim 1, further comprising a meltable material holder having an open lower end, which is provided in the preheating flue and is spaced at least from the wall surface of the preheating flue that is located on the opposite side to the material melting burner.

4. (Original) A metal melting furnace according to claim 1, further comprising a meltable material holder having an open lower end, which is provided in the preheating flue and is spaced from the entire peripheral wall surface of the preheating flue.

5. (Original) A metal melting furnace according to claim 3, wherein the meltable material holder is made of a cylindrical sleeve.

6. (Original) A metal melting furnace according to claim 1, wherein the inclined hearth is defined by a continuously inclined surface toward the molten metal processing portion.

7. (Previously Presented) A metal melting furnace comprising a preheating flue which is provided on its upper portion with a meltable material inlet opening and on its lower portion with an inclined hearth and a material melting burner which is oriented toward the lower portion of the preheating flue, a molten metal reservoir, and a temperature maintaining burner which provided in the molten metal reservoir, so that a meltable material which is introduced in the preheating flue is heated and melted by the material melting burner and is moved along and on the inclined hearth into the molten metal reservoir in which the temperature of the molten metal is maintained by the temperature maintaining burner, wherein a separation wall is provided between the inclined hearth and the molten metal reservoir to define a molten metal processing portion in a form of a chamber disposed between the separation wall and the inclined hearth, said separation wall being provided with a connecting passage for the molten metal, between the molten metal reservoir and the molten metal processing portion, at a height level higher than a bottom surface of the molten metal processing portion, said separation wall being provided on its upper portion with an exhaust gas passage which permits exhaust gas discharged from the molten metal reservoir to pass therethrough, and wherein an inspection opening with a door is provided in a furnace wall surface to open into the molten metal processing portion.